DOCUMENT RESUME

ED 297 208 CG 020 981

AUTHOR Meier, Scott T.
TITLE Enhancing the Attractiveness of Alcohol Education Via a Microcomputer Program.
PUB DATE Aug 87
NOTE 18p.; Paper presented at the Annual Convention of the American Psychological Association (95th, New York, NY, August 28-September 1, 1987).
PUB TYPE Reports - General (140) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Alcohol Education; Attitude Change; *College Students; *Computer Assisted Instruction; Drinking; Higher Education; Microcomputers; *Program Effectiveness; Student Attitudes

ABSTRACT

Getting students' attention is one of the most difficult problems for counselors who conduct alcohol education programs in high schools or colleges. A computer-aided instruction program using microcomputers for alcohol education was developed entitled "If You Drink: An Alcohol Education Program" (IYD). The IYD program consists of five modules: the alcohol quiz, the breath analyzer, the teen test, the party, and alcohol and drugs. Two field studies analyzing the effectiveness of the program were conducted. In the first study 18 undergraduate students overwhelmingly agreed that the IYD program held their interest. In the second study, a display of the IYD program during alcohol awareness week was in use almost continually. The program produced small positive changes in attitudes towards alcohol, but no negative changes. The program shows promise as an introduction to more extensive alcohol education efforts. (ABL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED297208

Enhancing the Attractiveness of Alcohol Education Via a Microcomputer Program

Scott T. Meier

SUNY Buffalo, Buffalo, New York

CG 020981

Presented at American Psychological Association Convention, New York, NY, August, 1987

Running Head: Alcohol Education

Address: Scott T. Meier, Ph.D.
Department of Counseling and Educational Psychology
409 Baldy Hall
SUNY Buffalo
Buffalo, New York 14260

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Scott T. Meier
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Author Notes: The author expresses appreciation to D. Dunphy for assistance in data collection and to S. Davis for critiques and assistance in development of the microcomputer program.

BEST COPY AVAILABLE

Enhancing the Attractiveness of Alcohol Education

Getting students' attention is one of the most difficult problems for counselors who conduct alcohol education programs in high schools or colleges. Evidence suggests that many students have little motivation to learn about responsible use of alcohol and other drugs. For example, Seay and Best (1984) administered the Michigan Alcohol Screening Test (MAST) to 395 college students. They found that 32 percent could be classified either as having a drinking problem or as alcoholic. However, only one percent perceived themselves as having any difficulty with alcohol consumption.

This author became interested in finding innovative ways of attracting students' attention to alcohol education after observing students at a university-sponsored alcohol awareness week. Tables were set up in a student activities building to encourage discussions with students and to distribute pamphlets. These pamphlets typically provide information about alcohol's psychological and physiological effects, factors that influence blood alcohol content (BAC), or the risks of drinking during pregnancy; indeed, printed materials are the most common method of communicating alcohol information (Anderson & Gadaleto, 1984). With the exception of a table where students could try a Breathalyzer machine,

most students simply walked past the exhibits. Adjacent to the tables, however, was a computer game room, filled with students playing electronic arcade machines.

The idea occurred that it might be possible to take the concepts in the alcohol education pamphlets and place them in a computer game format. This software might attract the attention of students who enjoy computer games, including late to mid-adolescent males, a major group of alcohol abusers. This software could provide computer-assisted instruction (CAI) about alcohol, thus combining the instrinsic appeal of computers and the proven effectiveness of CAI methods (for a review of CAI studies see Sampson, 1986). Such a CAI program might also provide an effective introduction to more extensive efforts that have included mass media campaigns (McKillip, Lockhart, Eckert & Phillips, 1985), peer discussion groups (National Institute on Alcohol Abuse and Alcoholism, 1983), and drug education classes (Stuart, 1974).

A general consensus has emerged about the effectiveness of alcohol education interventions: knowledge and attitudes about alcohol are easier to alter than drinking behavior (National Institute on Alcohol Abuse and Alcoholism, 1983). Not only do educational programs fall short in decreasing drug use, but some evidence exists that they can sometimes have the opposite effect. For example, Stuart (1974) arrang[illegible]or 335

students in seventh and nine grades to attend 10 sessions of drug education classes. Students who received drug education, compared to no-exposure controls, reported significant increases in their drug knowledge and in their use of alcohol, marihuana and LSD. Stuart suggested that drug use increased partially as a function of greater drug knowledge and reduced worry about drugs. The lesson to be drawn is that drug education programs must increase responsible attitudes and behaviors while minimizing the number of negative changers, i.e., persons who increase their drug use and favorable attitudes toward drugs following an intervention.

Program Description

The benefits of learning by CAI methods have been noted by many authors. Kadden and Wetstone (1982) suggested CAI promotes more active learning than traditional instruction, learning through CAI is self-paced and more individualized, and real-life simulations can be presented. Lepper (1985) emphasized the "rich and responsive learning environments" that could be created in computer presentations.

CAI takes many forms, including tutorials and simulations, and it is unclear which of these forms works bests, particularly in terms of increasing student motivation (Lepper, 1985). Reflecting this uncertainty, design of this alcohol education software included a variety of CAI formats. The resulting

program, called If You Drink: An Alcohol Education Program (IYD) (Meier, 1986), consists of five separate CAI modules. IYD users are presented with a menu listing the five modules in the order described below:

(a) The Alcohol Quiz. This 48-item true/false quiz presents items about alcohol and its effects for three difficulty levels. Following each answer an explanation or elaboration of the correct response is given along with the person's quiz score. Sample items include "At parties it is a good idea to serve only alcoholic beverages" and "Food should be served to people who are drinking because it slows the body's absorption of alcohol."

(b) The Breath Analyzer. This module explains how blood alcohol content (BAC) level is largely affected by three factors: weight, number of alcoholic drinks consumed, and time period of consumption. The user selects a real or imaginary drinking situation and enters the three factors mentioned above. The computer then graphically displays an approximate BAC level.

(c) The Teen Test. This 40-item Likert survey assesses students' attitudes in the broad domain of drinking and driving. After completing the survey, interpretative narratives are presented for the eight subscales that make up

the test (e.g., Consequences of Drinking and Driving). Sample items include "If you're going to have an accident, you'll have one anyhow, regardless of driving," and "I wouldn't like someone to try to stop me from driving after drinking."

(d) The Party. This module is a simulation of a party where drinking occurs. Students must decide how they will handle such situations as whether to purchase alcohol before going to the party, how much to drink at the party, and whether their group will include a designated, non-drinking driver. The module gives feedback in terms of a "Party IQ" score where responsible decisions increase the score. Students also provide information which allows the program to compute an approximate BAC level. If this BAC level rises to .04, the program branches to more difficult situations that might be caused by increasing inebriation.

(d) Alcohol & Drugs. This module presents a list of 16 commonly prescribed medications (e.g., antihistamines) and describes their potential interactions with alcohol.

Program Evaluation

To test the attractiveness and utility of IYD, two field studies were conducted the following year during the same alcohol awareness week. Several problems are associated with research in such a field setting. First, students may be

interested in examining the computer program, but filling out lengthy questionnaires is another matter. To gain student cooperation and maintain interest, questionnaires employed in the study were shortened to the briefest length possible. Second, finding students in this setting for a comparable control group is difficult. The solution to this problem was to employ, in the first study, a quasi-experimental method called the nonequivalent dependent variables design (Cook & Campbell, 1979). In this design a single group of persons is pretested on two scales, one of which is expected to be changed by the treatment and one of which is expected to be unchanged. The two scales employed in Study One assessed attitudes toward alcohol use and toward illegal drug use.

Study One

Four items with high item-total correlations were selected from the Alcohol Attitudes Scale (AAS) to serve as the brief measure of alcohol attitudes. A 16-item Likert scale previously developed by the author, the AAS was theoretically constructed on the basis of the Final Report of the Task Force on Responsible Decisions about Alcohol (Education Commission of the States, 1977); this document lists skills and attitudes believed necessary for appropriate choices about alcohol. Pilot research with 40 undergraduate students indicated that the 16-item AAS has good reliability (alpha = .80). Although alcohol is a drug, popular usage suggests a distinction

between alcohol and such substances as cocaine and marijuana. Four items relating to attitudes towards cocaine and marijuana were written and interspersed with the alcohol attitudes items to form the Illegal Drug/Alcohol Attitudes Scale (IDAAS; see Table 1). Since attitudes about illegal drugs should not be directly affected by the alcohol-oriented intervention, the hypothesis was that exposure to IYD would result in greater changes in alcohol attitudes as compared to illegal drug attitudes.

Insert Table One About Here

The alcohol/drug questionnaire was administered before and after students viewed an IYD module of their choice. Students also predicted how many drinks they would consume the following weekend at a party or bar, and they evaluated the computer program on six dimensions.

Results

A total of 18 students volunteered for this study. Twelve of those students were male, indicating that the program was slightly more successful in attracting the attention of men than women (single sample X 2 (1, N = 18) = 1.38, $p < .20$).

To examine the reliability of the alcohol and illegal drug attitudes scales created for this study, students' pre- and

post-intervention responses were combined and subjected to an item analysis. Alpha coefficients for the four-item alcohol and illegal drug scales were low (.40 and .33, respectively). Examination of item-total correlations indicated that removing two items from both scales would increase their reliability; the resulting two-item alcohol scale's alpha was .70, while the value for the two-item illegal drug scale was .53. Both values indicate moderate reliabilities for the revised scales and provide more confidence that results of the data analyses reflect homogenous scale scores.

Analysis of covariance, using revised pretest alcohol and drug attitude scores as the covariates, indicated a trend toward statistical significance ($F(2,33) = 2.06$, $p < .16$). This analysis suggested that after viewing a portion of IYD, students changed their attitudes toward alcohol use more than they did toward illegal drug use. Means and standard deviations are displayed in Table 2.

Insert Table Two About Here

A t-test indicated that although students slightly decreased the amount they expected to drink, exposure to the program did not significantly change drinking intentions (t (30) = 0.39, $p < .70$). At pretest students indicated they would consume an

average of 4.83 drinks at a party or bar the following weekend; at posttest the average was 4.21 drinks.

Analyses were also conducted to determine if exposure to the program produced any negative changers, i.e., persons whose attitudes towards alcohol became more inappropriate or whose drinking intentions increased. Only one student indicated less responsible alcohol attitudes (single sample X 2 (1, N = 16) = 12.50, p < .001). No students increased the number of drinks they intended to consume the following weekend (single sample X 2 (1, N = 16) = 14.06, p < .001).

Students' evaluation of IYD was uniformly high. The program was rated on a 5-point Likert scale for six dimensions:

(a) Sixteen students (89%) strongly agreed or agreed that the program was easy to use and understand;
(b) Seventeen students (94%) strongly agreed or agreed that IYD held their interest in the subject;
(c) Ten students (56%) strongly agreed or agreed that the program increased their knowledge about alcohol and drinking;
(d) Twelve students (67%) strongly agreed or agreed that IYD increase their sense of control over drinking behavior.
(e) Twelve students (67%) strongly agreed or agreed that the program gave them new viewpoints about alcohol and drinking;

(f) Fourteen students (78%) strongly agreed or agreed that IYD seemed like a good way to teach other students about alcohol.

Study Two

The second study was designed to determine which IYD module was most frequently employed and how long the entire CAI program was in use. IYD was displayed on two days of the alcohol awareness week for a total of three and one-half hours. Students were invited to aid in evaluation of the program by examining a module of their choice; the computer program recorded both the module choice and length of viewing period.

Results

IYD was actually used by students for 66 per cent of available time (139 minutes). Average length of time employed to view a module was approximately five and one-half minutes. IYD was used a total of 26 times: the drinking simulation was the most frequently chosen module (42 per cent), followed by the alcohol quiz (31 per cent), survey of teens' drinking and driving (19 per cent), blood alcohol content level (four per cent), and drug and alcohol interaction (four per cent). A single sample chi-square test of the differences among modules selected was significant (X^2 (4, N = 26) = 14.77, $p < .01$). No significant difference was found in an analysis of variance

examining differences among modules for length of time viewed ($F(4,21) = 0.60$, $p < .67$).

Conclusion

In both studies, IYD succeeded in attracting students' interest. In Study One, students overwhelmingly agreed that the program held their interest. In Study Two, IYD modules were in use 66 per cent of the available time; including time spent while students observed the beginning of the program or decided which module to view (events not recorded by the computer), the program was in use almost continually.

In listening to students talk about the program, the author was struck by how feedback to self (e.g., one's score in a computer game) was highly reinforcing to IYD users. This view is supported by the data in Study Two which indicates that the Alcohol Quiz and The Party, both of which provide substantial feedback about students' knowledge and drinking decisions, were the two most frequently chosen modules.

The program also produced small, but positive changes in students' attitudes toward alcohol and their drinking intentions. Equally important, IYD produced almost no negative changers. No students increased the number of drinks they expected to consume the following weekend, and only one

student decreased appropriate attitudes toward alcohol. Essentially, the program did no harm.

Given its attractiveness to students and its ability to nudge students in appropriate directions, IYD shows promise as an introduction to more extensive alcohol education efforts. Future research should address how the program could be effectively incorporated into new or existing interventions.

References

Anderson, D., & Gadaleto, A. (1984). Progress or illusion: The 1979 and 1982 college alcohol surveys. Journal of College Student Personnel, 25, 332-33.

Cook, T., & Campbell, D. (1979). Quasi-Experimentation. Chicago: Rand McNally.

Education Commission of the States (1977). Final report of the task force on responsible decisions about alcohol. Denver, Colorado: Author.

Kadden, R., & Wetstone, S. (1982). Teaching coping skills to alcoholics using computer based education. In B. I. Blum (Ed.), Proceedings of the Sixth Annual Symposium on Computer Applications in Medical Care (pp. 635). New York: Institute of Electrical & Electronics Engineers.

Lepper, M. (1985). Microcomputers in education: Motivational and social issues. American Psychologist, 40, 1-18.

McKillip, J., Lockhart, D., Eckert, P., & Phillips, J. (1985). Evaluation of a responsible alcohol use media campaign on a college campus. Journal of Alcohol and Drug Education, 30, 88-97.

Meier, S. (1986). If you drink: A guide to alcohol education [Computer program]. Willowdale, Canada:

Multi-Health Systems, Inc.

National Institute on Alcohol Abuse and Alcoholism. (1983). Fifth special report to U.S. Congress on alcohol and health. Washington, D.C.: U.S. Government Printing Office.

Sampson, J. (1986). The use of computer-assisted instruction in support of psychotherapeutic processes. Computers in Human Behavior, 2, 1-19.

Seay, T., & Beck, T. (1984). Alcoholism among college students. Journal of College Student Personnel, 25, 90-92.

Stuart, R. (1974). Teaching facts about drugs: Pushing or preventing? Journal of Educational Psychology, 66, 189-201.

Table 1

Items for the Illegal Drug/Alcohol Attitudes Scale

Item Number	Item
1.	Drunk people can be funny.
2.	It's morally wrong to use drugs like marijuana and cocaine.
3.	It's okay to drink alone.
4.	Stopping use of marijuana and cocaine should be a top priority in this country.
5.	Sometimes I'm not sure why I use alcohol the way I do.
6.	People who are high can be funny.
7.	If I drink, I drink in moderation.
8.	Moderate use of drugs like marijuana and cocaine are relatively harmless.

Note. Items 1 and 7 form the alcohol attitudes scale employed in data analyses; items 2 and 8 form the illegal drugs scale. Items 2 and 7 are reversed when scoring so that low scores indicate responsible attitudes. Students responded to these items on a 5-point Likert scale where 1 indicated strong disagreement and 5 indicated strong agreement.

Table 2

Means and Standard Deviations for Brief Attitudes Scales

Scale	Pretest M	Pretest SD	Posttest M	Posttest SD	Posttest Adjusted Means
Alcohol	5.53	2.32	5.19	2.41	4.50
Illegal Drugs	4.00	1.85	4.50	2.26	5.20

Note. Lower scores indicate more responsible attitudes.